

REMARKS/ARGUMENTS

Claim 7 is amended to incorporate original claim 8 and to recite that the length of the debris channel is greater than the corresponding length of the teeth relative to the longitudinal axis of the reamer from the cutting edge. Support for the amendment can be found in the specification as filed, lines 10 to 18 of paragraph [0027] and illustrated clearly with reference to figure 4a and 4b. Claims 1-6, 8, and 11-13 have been cancelled without prejudice. New claims 14-19 have been added and are supported as detailed above for the amendments to claim 1. The Specification is amended to correct a typographical error in paragraph [0027] and conform to the drawing amendments in paragraph [0044]. A replacement Abstract of the Disclosure is provided that contains fewer than 150 words and is more consistent with the presently claimed invention. The Specification is amended to add section headings. Applicants respectfully request favorable reconsideration.

Specification & Claim Objections

The Office objected to the Specification and claims 7 and 10 because they contain the words centraliser, centralising, and biassing spelled according to British spelling standards. This objection is contrary to MPEP 608.01 which states:

Examiners should not object to the specification and/or claims in patent applications merely because applicants are using British English spellings (e.g., colour) rather than American English spellings. It is not necessary to replace the British English spellings with the equivalent American English spellings in the U.S. patent applications. Note that 37 CFR 1.52(b)(1)(ii) only requires the application to be in the English language. There is no additional requirement that the English must be American English.

Claim Rejections – 35 USC § 102

The Office rejected claims 7 and 10 under Section 102(b) as being anticipated by Scarborough et al. Scarborough discloses a reamer 10 having a spring biased centraliser 44. Scarborough discloses a toothed cutting edge positioned about the centraliser 44. However, Scarborough does not disclose at least one debris channel extending from the cutting edge being additional and distinct from the cutting teeth by extending a greater distance along the reamer

body with regard to the teeth. Applicants respectfully submit that the presently claimed invention is not anticipated by Scarborough. Withdrawal of the rejection is requested.

Claim Rejections – 35 USC § 103

The Office rejected claim 8 under Section 103(a) as being unpatentable over Scarborough in view of Spranza, III (U.S. Patent No. 6,884,245). As claim 7 has been amended to include the subject matter of claim 8, this is the only substantive rejection discussed herein. All other claim rejections are moot in view of the claim amendments.

The reamer of Scarborough differs from the claimed subject invention as it does not have a debris channel extending from the cutting edge of the reamer. The technical affect of the debris channel is to allow cut bone matter to pass from the interior of the reamer (defined by the circular zone of the cutting teeth and the reamer body) to a region outside of the cutting zone whilst the reamer is cutting. Primarily, the technical affect ensures that debris bone matter is transported away from the cutting zone as the cutting teeth are rotated. Without the debris channel the inventors have observed that at least some cut bone matter is retained in the groove. This debris matter within the groove is problematic as it provides an abrasive grinding affect on surrounding bone as the reamer is rotated to form the narrow groove. The result is a non-clean, low quality groove of non-uniform width and cross sectional profile along its length into the bone.

The debris channels also ensure that the cutting zone is relatively un-obscured when viewed by a surgeon, this being important to ensure minimum invasive surgical procedures. A reamer with at least one debris channel is also less susceptible to clogging and requires less cleaning and maintenance and is therefore more durable and easier to maintain.

As indicated, while Scarborough does disclose the toothed cutting edge, being similar to the subject invention, Scarborough does not disclose any debris channels extending from the cutting edge. The reason for this is that the objective of Scarborough is different to that of the subject invention. Referring to Scarborough column 1, lines 52 to 59 the device is directed to cutting and forming ***dowels*** from bone mass for subsequent implantation into a cylindrical groove from which damaged tissue has been removed. That is, Scarborough is not directed to a reamer configured to form a narrow groove at a bone site. The difference in the objectives of the

present invention and Scarborough has the effect that the requirement of the quality of the cut around the dowel of Scarborough is not as important as the quality of the groove of the subject invention. As detailed at paragraph [0039] of the subject application, it is important that groove 7 is cut to a very accurate width such that the retaining sheet 11a is capable of firstly being inserted into the groove and secondly to be anchored within the groove by frictional contact. This necessitates the groove is formed with a predetermined width. It is also important to ensure this width is created under very fine tolerances so as to ensure optimum initial mechanical anchorage prior to tissue ingrowth and the secondary biological fixation.

Furthermore, from Scarborough, the skilled person would not consider implementing bone debris channels as this would be unhelpful with dowel extractions. Debris within the groove typically becomes sandwiched between the reamer and the surrounding bone walls. The trapped matter provides frictional contact between the reamer and the column of bone that is to become detached to form the dowel. This frictional contact assists in snapping cleanly the column free at its base to allow extraction. This frictional contact is entirely unwanted with the subject invention as it is critically important that the surgical procedure does not detach the bone column. Moreover this detachment would result in complete failure of the present minimal invasive repair procedure. Scarborough therefore may be regarded as teaching *away* from the subject invention being directed to extracting dowels in contrasted to a device for creating a narrow groove and importantly maintaining anchorage of the as-formed central bone column against which an implant is to be affixed.

Spranza discloses a bone coring cutter having a toothed cutting head 11. Three cutting teeth are formed in the cutting head referring to figure 2. Referring to figure 3, the trailing edge of each tooth is formed as a sharpened projection via a tooth clearance relief angle 18. Spranza does not disclose a reamer having a toothed cutting edge in addition to at least one debris channel that extend from the toothed region.

The cutter of Spranza differs significantly from the subject invention as the cutting edge is coned shaped so as to provide a 'dovetail' cross section referring to column 3, lines 56 to 64. This is designed to provide adequate clearance for the trailing shank. The cutter of Spranza is not designed to form a narrow groove into the bone and importantly does not comprise cutting teeth being distinct from debris channels. None of the objects stated in Spranza at column 2

relate to forming a narrow groove of predetermined width under very fine tolerances. Accordingly, the skilled person would find no motivation from Spranza to implement a toothed cutting edge in addition to at least one debris channel so as to ensure very accurate groove width creation. Spranza is directed to solving an entirely different problem and the skilled person would not be motivated or assisted to achieve the subject invention.

In view of the foregoing, Applicants respectfully submit that the amended claims would not have been obvious from the combined teachings of Scarborough in view of Spranza, III. Applicants respectfully request withdrawal of the rejection under Section 103(a) and allowance of all pending claims. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

Respectfully submitted,

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The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-0843.
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